

# The Citrus Industry

ISSUED MONTHLY

Representative of every interest  
Representing no special interest

Vol. 14, No. 3

TAMPA, FLORIDA, MARCH, 1933

15 Cents a Copy

The meeting  
of the  
Florida Horticultural Society  
in Lake Wales  
April 11, 12 and 13  
promises much of interest to every  
grower in Florida — It will  
pay you to attend if  
you possibly  
can

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# RIGHT NOW IS THE TIME TO GIVE YOUR CROPS A WINNING DEAL



MORE THAN EVER BEFORE—during a year of keen competition—growers must make sure their fertilizer selection promises maximum returns for their time, money and effort. That's why it's so important at this time to give your crops a "WINNING DEAL." Without question it's the time to face facts . . . it's the time to shuffle the deck . . . and is the time to deal every crop a hand of winning cards.

In using Ideal Fertilizers you are dealing your crops such a hand . . . you are using the best fertilizer you can obtain, but you must use enough of it to give you the quality crop your work entitles you to. The harmful results of skimping and using so called "cheap" materials and combinations have been thoroughly proved. Today most growers realize the folly of such practise and are getting a head start on their competitors by giving their crop plenty of the abundant energy that is readily available in Ideal

Fertilizers. That's why there are more Ideal Fertilizers used in Florida than any other brand.

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after season. These growers have learned from experience that there's citrus and vegetable profits in every sack of Ideal Fertilizer. Take these profits for yourself this year. Use Ideal Fertilizers and deal your crops a winning hand. Get in touch with our field representative or write us direct. Wilson & Toomer Fertilizer Company, Jacksonville, Florida.



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In Ideal Fertilizers you can be assured of a liberal use of Genuine Peruvian Bird Guano. When you want Bird Guano demand Genuine Peruvian. Do not accept substitutes. An ample supply of Genuine Peruvian Bird Guano is now available and at a price which is lower than at any time during the past twenty years.

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MOST VALUE PER DOLLAR

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## IDEAL FERTILIZERS

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# Constructive

"When my fruit goes to market through your organization, as it has for six seasons, I get its full market value (I've compared my returns with others so I am sure of that), and I further feel I have done my part toward upbuilding our industry, for as a constructive factor on behalf of the industry as a whole, AFG is an accepted leader."

From a Grower's letter

American Fruit Growers, Inc.

Florida, Division  
Orlando, Florida





Vol. 14

TAMPA, FLORIDA, MARCH, 1933

No. 3

# Florida State Horticultural Society Meeting

By BAYARD F. FLOYD, Secretary

The Forty Sixth Annual Meeting of the Florida State Horticultural Society will be held April 11th, 12th and 13th in Lake Wales. The meeting opens at 8 P. M. on Tuesday, April 11th and continues through Wednesday and Thursday, April 12th and 13th. For the opening session, a speaker with a national reputation has been invited to give the main address.

The preliminary program (subject to change) as announced from the secretary's office is as follows:

**Tuesday Evening—April 11th**

8:00 P. M.

1. Call to order.
2. Invocation.
3. Address of Welcome.
4. Response for the Society.
5. President's Annual Address.
6. Music.
7. Address—Speaker to be announced.
8. Announcements.
9. Reception to members of Society by Lake Wales Chamber of Commerce at Dixie Walesbilt Hotel.

The subjects for discussion during Wednesday and Thursday are as follows:

**Wednesday—April 12th**

9:00 A. M.

The Fertilizing of Citrus Trees.  
The Intake of Plant Foods by Citrus Trees.

Organic Source of Plant Food.

The Crotolarias as Cover Crops.  
Costs in Citrus Fruit Production.  
The Production of Summer Oranges.

**Wednesday—April 12th**  
1:00 P. M.

Opening 8th Annual Florida State Rose Show at Dixie Walesbilt Hotel.

**Wednesday—April 12th**  
2:00 P. M.

Correlation of Daily Rainfall and Soil Moisture with Citrus Yield and Size of Fruit.

Increasing the Efficiency of Lime Sulphur Solution.

The Maturity of Citrus Fruits.

The Bulge Pack—Is it a market necessity?

The Value of the Brand in Citrus Marketing.

Motorcade to points of interest.

**Wednesday—April 12th—8:00 P. M.**  
The Growing of Limes in Florida.  
The Need for Research in Citrus Fruit Production.

What Protection Do the Citrus Groves of Florida Need Against the Introduction of Diseases and Pests?

Pollination and Other Factors that Influence Fruit Production in Avocados.

Tung Oil Developments of the Year.

**Thursday—April 13th—9:00 A. M.**  
Conditions Favoring Decay in Citrus Fruits.

An Unusual Pest of Citrus Trees.

Melanose and Stem-end Rot of Citrus.

Spray and Other Machinery for the Grove.

A Spray Program for the Citrus Grove.

**Thursday—April 13th**

1:30 P. M.—Top Working of Citrus Trees.

3:00 P. M.—Concert at Bok Tower—Mountain Lake.

4:00 P. M.—Spray Demonstration—Mountain Lake Groves.

4:00 P. M.—Reception for Ladies by Garden Club of Lake Wales.

**Thursday—April 13th—8:00 P. M.**  
Citrus Fruit Products.

Lantern Slide Lecture on Trees.

The Domestication of Wild Flowers.

A Palm Arboretum for Florida.

All meetings of the Florida State meetings of the Florida State Horticultural Society will be held in the Auditorium of the High School, where ample stage facilities are available and the acoustics are good. The use of an amplifier has been promised, so that it will be possible for all to hear with ease. A number of talks will be illustrated with lantern slides.

Meeting at the same time as the Horticultural Society will be the Eighth Annual Meeting of the Florida Rose Society. Its meeting will be held in the private dining room of the

(Continued on page 8)

# The Peddler Truck Situation In Regards To Florida Fruit and Produce

By RICHARD D. POPE, Winter Haven, Florida

First, to start with, truckers may be segregated into two classes, good and bad, using exactly the same division that is necessary in classifying any other profession. When the truck first started buying fruit from the packing house, it seemed a very good idea, as the majority of the fruit was taken to Miami, St. Peters-

attractive mean nothing to the average truck peddler who handles it in the roughest possible manner, and puts it in the same low class as any bulk commodity from potatoes to coal.

The good truck drivers, and there are many, have their own wholesale outlets, and buy their fruit in boxed

and second grades, and the better the fruit the more pleased he is. The other type of peddler is the one who buys where he can afford it, generally the cheapest kind of cull fruit, or sometimes drops and unwashed fruit directly from the grove, where the fruit owner is lucky if he does not give two boxes for every box he actually sells. This trucker takes his load up to a city in another state, and there parks at a curb market, and shovels his fruit out of the truck into dirty looking second-hand containers. Many times the fruit sets out in weather fifteen or twenty above zero, and is frozen through and through, but the trucker knows only that he must get rid of it, and stands there shouting loudly his price of as low as 40c or 50c a bushel to attract customers. This same fruit is brought into this and other markets, and sold to consumers, who are dissatisfied and naturally slow up in their buying of Florida citrus fruits.

In many of these peddler markets 90 percent or over of the fruit will run third or fourth grade or just plain culls. Much of it is unwashed, possibly one-third or more and this of course, is very unattractive in appearance being dirty and sooty, and at times some of them have stems an inch long—indicating they may have been stolen at night.

The intelligent trucker takes his fruit to his customers in boxes stamped with the sizes and grade, and labeled so that the buyer may know from where it comes. This truck operator runs five trucks a week of fruit loaded in James creates to his various clientele in southeastern markets.

burg, Jacksonville, Tampa, etc. Fair prices were paid for low grade oranges and odd varieties, and a market was made that otherwise was difficult for a packing house to sell.

Soon these trucks branched out and more trucks came into the field. The 50-mile haul turned into a thousand-mile haul, and trucks headed for the South driven by their owners who wanted a ten-day vacation in Florida, and who certainly knew nothing about fruit or the sale of it.

Trucks did cause the railroads to give lower rates into the south, and, of course, are very definitely needed to haul packed fruit to steamship lines.

Something, however, must be done to curb and control this truck menace for otherwise there will be no incentive to growers to produce bright, attractive fruit, through careful spraying and pruning of the trees. Modern equipment such as coloring rooms, washers, solution tanks and polishers used to make the fruit more

form, deliver it according to the manner in which orders have been placed with them on the previous trip. They act as a more mobile type of broker



The increase of uncontrolled truck shipments spell disaster for our industry

or commission man.

This trucker does not want third and he wants them overflowing and grade fruit, but wants grove run first

The trucker buys by the field box

(Continued on Page 22)

# Effect of Lead Arsenate Insecticides on Orange Trees In Florida

By R. L. MILLER, Assistant Entomologist, IONE P. BASSETT, Senior Scientific Aid, and W. W. YOTHERS, Entomologist, Division of Fruit and Shade Trees, Bureau of Entomology, in

Bulletin No. 305, U. S. Dept. of Agri.

One of the important methods used in the successful campaign to eradicate the Mediterranean fruit fly (*Ceratitis capitata* Wied.) from Florida was the application of a poison spray on which the adult flies fed. The most effective bait spray available in this emergency contained lead arsenate as the poison. Although it had been known for many years that arsenic hastened the maturity of citrus fruit by reducing the acid content and that its use had, in some instances, rendered the fruit unpalatable, the menace of this insect pest to the citrus industry of Florida and to fruit production elsewhere in the United States was so great that the authorization for the use of this poison was fully justified, and its use was approved by responsible State officials.

During the eradication campaign voluminous notes were accumulated as to the effect of the bait sprays on citrus trees and fruit. These notes were of a general nature, and the observations recorded were more or less conflicting. It seemed necessary, therefore, to conduct some carefully planned experiments to secure accurate information on the effect of arsenic on citrus trees. This bulletin reports the results of fundamental investigations carried on under funds providing for necessary research to eradicate this major pest from Florida.

#### Previous Work

Soon after arsenic was first used on citrus in Florida—in 1893, by Lyman Phelps—it was found that the fruit on arsenic-sprayed trees matured more quickly than other fruit. Since that time arsenical materials have been used considerably, sometimes to control insects but more often to hasten the legal maturity of the fruit. Certain insecticides that have been sold in Florida have been found to contain arsenic in considerable quantities. In one case, in 1915, as much as 2.03 per cent of arsenic trioxide ( $As_2O_3$ ) was found in a commonly known materials. (2)

In 1921 Gray and Ryan published

an account of some arsenical spraying in California. They found that when acid lead arsenate was used the acidity of oranges was reduced 50 per cent or more from the normal but that the sugars were not significantly changed. When basic, or neutral, lead arsenate was used there was little or no change in acidity. These workers believed the acid reduction to be due to the soluble arsenic liberated on the foliage. They stated that the effect on the tree probably was systemic, for all the fruits examined from the sprayed trees were of reduced acidity.

In 1925 Juritz discussed the use of arsenic on citrus trees in South Africa. The treatment of the trees and the effect on the acid and sugar of the fruit are shown in Table 1, which is taken from his report.

Table 1.—Analysis of sprayed and unsprayed oranges made by C. F. Juritz in South Africa, 1925

Insecticide used per tree	Analysis of fruit	
	Acid Per cent	Sugar Per cent
Lead arsenate mixture, 53 ounces	0.18	1.12
Lead arsenate mixture, 26 1/2 ounces	.49	8.65
Check, unsprayed	1.12	4.14

Juritz stated that the effect remained more than a year and that the whole tree was systemically affected if only one-half was sprayed. He was the first worker to report that the soluble solids of the juice

were seriously reduced.

In 1925 the State of Florida passed legislation restricting the sale of fruit that did not pass certain maturity tests of acid and soluble-solids requirements. When this was done and certain growers realized that the legal maturity of fruits could be hastened by arsenical spraying, many instances were found where the legal maturity was speeded up by spraying or dusting.

In 1926 Grossenbacher suggested that there be some definite requirement regarding the ratio of solids to acid for a standard of legal maturity (namely a maximum as well as a minimum value for the ratio), thereby disqualifying arsenical-sprayed fruit. In 1927 the Florida Legislature passed a law forbidding the use of arsenic on citrus trees, but in 1929

Table 2.—Effect of lead arsenate on total soluble solids and ratio of acid to solids in oranges—(Analyses of Nov. 8, 1926)

Source of fruit analyzed	Sugar	Acid	Ratio of acid to sugar
	Per cent	Per cent	
Top of tree	9.75	1.26	1 to 7.74
Lower limbs	9.00	.53	1 to 17.00
Top of tree	9.10	1.20	1 to 7.50
Lower limbs	8.85	.48	1 to 18.44

Table 3.—Effect on oranges of arsenical applied as a dust (Analyses of Nov. 8, 1926)

Source of sample	Sugar	Acid	Ratio of Acid to sugar
	Per cent	Per cent	
Dusted trees	9.70	0.14	1 to 69.30
Check trees	9.80	1.11	1 to 8.88

Work done by Yothers and others

(Continued on page 23)

(2) Miscellaneous analyses 22611, made by C. H. Walker of the Bureau of Chemistry and Soils, U. S. Department of Agriculture.

# The Future Of Grapefruit

Weekly Bulletin Issued By JOHN D. CLARK, President Waverly Citrus Growers Assn.

We all admit that the past and present seasons have been off years for grapefruit in both Florida and Texas. It is hard to say what in boxes a normal crop would be at this period in the development of the grapefruit industry. In the season 1930-31 the crop in Florida was some 17,000,000 boxes. Another grapefruit year is due, perhaps past due, and it is safe to guess it may reach 20,000,000 boxes and it may be this coming season or it may be the one following.

In the last large crop year for grapefruit we had a united industry in the Clearing House and in spite of the loud squawks of our Parent Cooperative, who was then a member, we had good distribution, same regulation and united action. Without doubt it was these things that avoided a marketing disaster that year.

The past two seasons our production has been about half that of '30-31, yet the returns to producers has been on an average below the cost of actual growing of the crop. Texas is reported to have about three times the volume of any previous year in sight for the coming season and from now on we may expect a normal production in both states to be far in excess of any peak year we have yet seen.

Something may happen to change all this. But nothing short of a major disaster to the trees or groves can alter the course of events as they are now shaping.

Over two years ago this Association sounded the warning that something must be done to find new markets and new uses for grapefruit. Believing that a nation wide and a world wide twelve months consumption was the logical answer to the thing that was facing us, we persuaded six local grower groups to build a cannery to can both the fruit and the juice. It was the first cooperative grapefruit cannery in the state and has been a success from the beginning.

From the standpoint of the grower it makes no difference whether fruit is eaten out of the skin or out of a can. Keeping consumption in line with production is our main problem and if we confine the use of grapefruit to just those who eat it in its fresh form the job of keeping this

balance is just so much harder, in fact to find a market for this volume of grapefruit in its fresh form is perhaps impossible.

## Can Grapefruit In A Can Be Popularized?

Even in this year of depression, several of the chain groups in New York City have been featuring our canned grapefruit and juice and they report that no other canned product lends itself so successfully to sales effort as does this grapefruit and canned grapefruit juice. In this most limited area through these outlets alone in the past few months we have sold over fifty thousand cases. A similar effort if used over the nation would dispose of every grapefruit Florida could possibly grow.

Before we had finished one year's operation of our cannery we had persuaded the Florida Citrus Exchange of the logic of the producers themselves gaining control of this canning industry then in its infancy. We outlined a program to accomplish this which they approved and adopted and we put our cannery in this Exchange program which had for its object the restoration and preservation of grapefruit canning in the hands of the producers themselves.

Well it turned out like most other similar efforts. Talking about accomplishing something and actually doing it are two different things. Well, the whole effort flopped.

If canned grapefruit and canned grapefruit juice are to prove the answer to our grapefruit problem they must be backed by a nation wide program of sales effort and advertising. Instead of the present limited consumption of the product the markets must be stimulated and enlarged. That this can be done has been proven beyond question and what remains to be done is actually putting our knowledge and experience to work.

The thought I want to get across to the readers of this bulletin is that the canners as such are never going to enlarge this market. They are interested primarily in a canning profit. We must have someone in control of the canning business who is interested in the growing of grapefruit at a profit rather than canning at a profit.

It is our earnest hope that some other grower groups in the state will become alive and active and acquire

for themselves canning facilities in volume and under able leadership vision the future and adopt a united program and get back of this canning business so that it may be the means of saving the growers many difficult years directly ahead of them.

If we can once convince the grapefruit growers of Florida that their major outlet for this ever increasing volume is in cans we will have laid the foundation for something being done. In the interim, while this truth is sinking in, the growers of grapefruit are facing dark days indeed. And this is true whether the grower lives in Florida, Texas or Porto Rico.

## FLORIDA STATE HORTICULTURAL SOCIETY MEETING

(Continued from page 5)

Dixie Walesbilt Hotel and its preliminary program is as follows:

**Wednesday—April 12th—2:00 P. M.**  
Growing Roses They Say Will Not Grow in Florida.

Treatment of One Year Old Rose Bushes.

New Varieties of Roses.

Diseases of Roses and Their Control.

Rose Pests and How to Handle Them.

Illustrated Lecture on Roses.

A special program on Avocados, Mangoes and other sub-tropical fruits is being prepared that will be made through the state papers and April Issue of THE CITRUS INDUSTRY. Members and those wishing to become members should mail their membership fees of \$2.00 to N. A. Reasoner, Treasurer, at Oneco, Florida.

The citrus outlook committee of the United States Department of Agriculture forecasts the production for 1932-33 at 48,788,000 boxes of oranges and 13,221,000 boxes of grapefruit.

An eminent New York economist has figured that a rise of one percent in the price levels of New York state farm products would equal a 10 per cent cut in taxes.

The citrus blackfly has been found 123 times in imports to Florida since January, 1918. Each time it was found by port inspectors of the State Plant Board and destroyed.

# Proposal To Reorganize Exchange Rejected

Chief interest in citrus circles during the past month centered around a proposal of President William Edwards of the Florida Citrus Exchange asking for the resignations of General Manager C. C. Commander and all department heads and a general reorganization of Florida's co-operative marketing agency.

Mr. Edwards' plan as outlined to the directors of the Exchange in meeting at Tampa on March 11, embraced the following points:

1. Replacement of General Manager C. C. Commander.
2. Immediate resignation of all department heads.
3. Appointment of an assistant general manager.
4. Further reduction of the exchange's overhead expense.
5. Reduction in number of packing houses through consolidation.
6. "Rejuvenation" of the sales department by giving it greater control over shipments and sales.
7. Adoption of a uniform system of seasonal pools by all associations in handling fruit returns.
8. Investigation of subsidiaries, such as the Growers Loan and Guaranty company, and the election of himself as president of all subsidiaries, to assure closer cooperation with the parent organization.
9. Adoption of stronger contractual agreements with growers, and the "modernization" of the exchange's legal department.
10. Establishment of a uniform system of accounting in all associations, and adoption of a uniform basis for making loans to growers.
11. Organization of a purchasing department to buy supplies cooper-

atively for exchange packing houses and growers.

12. Observance of a policy of "open covenants, openly arrived at" in exchange operations.

President Edwards' plan was first made public in an address before the meeting of the Exchange Presidents Association in Lake Wales on March 9, and was formally presented to the board of directors of the Exchange at a regular meeting in Tampa two days later.

When the matter was presented to the board of directors, a motion to reject the first two proposals was made and was carried by a vote of 15 to three.

The roll call vote on the rejection of Edwards' two recommendations follows:

Ayes, Frank G. Clark, Indian River City; J. O. Carr, Fort Ogden; John A. Snively, Winter Haven; C. B. Hipson, Umatilla; B. E. Stall, Tampa; L. L. Lowry, Orlando; J. G. Grossenbacher, Plymouth; John Morley, Lake Alfred; Lee S. Day, Bradenton; C. A. Garret, Kissimmee; John S. Taylor, Largo; A. W. Hurley, Winter Garden; R. J. Kepler, jr., DeLand; H. E. Cornell, Winter Haven and Clinton Bolick, Fort Myers.

Nays, J. C. Chase, Sanford; Vet L. Brown and J. K. Stuart, Bartow. Not voting, Edwards, Zellwood and C. H. Walker, Bartow.

Some of the directors voting to reject the Edwards proposals based their action upon the ground that the time was inopportune for considering reorganization proposals—it was said that the Exchange could not afford to "change horses while crossing a stream".

Consideration of other points in President Edwards' plan for reorganization was postponed until a later meeting of the board of directors. Meantime a questionnaire is being addressed to Exchange members asking their views on the proposed changes.

In Exchange circles outside the board of directors there has been much discussion of the proposed plan and it is evident that there will be a general response to the questionnaire when it is presented to the membership. Among those associations which have shown a disposition to think and act independently of Exchange headquarters, there is evident a tendency to approve of President Edwards' proposals, but in other quarters the opposition to "rocking the boat" in the midst of the shipping season is equally pronounced.

Among the directors, the Edwards plan was strongly endorsed by former President J. C. Chase of Sanford, Vet L. Brown and J. K. Stuart of Bartow, while all other members of the board joined in opposing the plan, at least at the present time. Mr. Edwards himself made a strong plea in behalf of his recommendation, while the administration of General Manager Commander was defended by friends on the board.

Action on the remaining points in the Edwards' plan is scheduled for the next meeting of the board on April 21. Meantime President Edwards has announced that he will call meetings of Exchange members for a discussion of the plans and Manager Commander has declared his willingness to meet the issue on "President Edwards' own ground."

Cool, moist conditions and tender, succulent growth are necessary for scab development. The period during which the twigs, leaves or fruit may be infected usually is of short duration. Thus proper spraying just before or at the beginning of this critical period should reduce or prevent the major part of the injury that occurs on the fruit.

Two or three applications of 3-3-50 bordeaux mixture ordinarily will give the fruit protection. These should consist of a dormant application just previous to the opening of the bloom

cluster, a second application at the end of the main flush of bloom when most of the petals are off and small fruits are becoming visible, and a third application three or four weeks later.

Active quick lime should be used in preparing the 3-3-50 bordeaux, and the spray should be spread uniformly.

Grapefruit supplies in competing countries are low, and the export outlook would be bright were it not for the foreign duty situation.

## AVOCADO SCAB CAN BE HELD IN CHECK BY BORDEAUX SPRAY

Orlando, Fla., — Growers of avocados susceptible to scab would do well to take precautions to prevent the disease, according to H. E. Stevens and H. R. Fulton, pathologists with the United States Department of Agriculture here. The trouble is widely scattered in Florida. The Lula, Taylor, Fuerte, Trapp and many individual plants of the West Indian type are highly susceptible to scab infection under favorable conditions.

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## THE CITRUS EXCHANGE SITUATION

Rumblings of discontent and dissension in the ranks of the Florida Citrus Exchange which have been heard for some time, came into the open during the past month with a demand of the Exchange President, William Edwards, that General Manager C. C. Commander and all department heads tender their resignations, and that radical changes be effected in the set-up of Florida's co-operative citrus marketing agency.

The suggestions of President Edwards were voted down by the Exchange board of directors by the decisive vote of fifteen to three, giving Manager Commander a decisive edge in the first round of what promises to be a long drawn out struggle for active control of Exchange policies.

The first effect of the controversy which has been injected into Exchange affairs doubtless will be unfavorable to Exchange growth and influence. Turmoil and strife are bound to be the immediate effects of the contest for supremacy. However, should this controversy lead to an elimination of politics within the Exchange and to a realization that the welfare of the grower rather than the preferment of any individual or the advantage of any organization is the goal toward which all must strive, any temporary disorganization will be well worth the price.

There has been entirely too much politics in Florida citrus circles. There has been politics in the Exchange, politics in the Clearing House, politics in this organization and in that, politics in the dealings of one agency and organization with other agencies and organizations, each striving to secure advantage for itself without too much regard for the interests of the industry as a whole or for the welfare of the individual grower upon whom in the final analysis the success of the industry is based.

If, out of the turmoil which has been injected into the Exchange by President Edwards' suggestions and demands, there shall arise among the growers both in and out of the Exchange, a determination to get together on common

ground, demand that their interests be made paramount, to that of any agency or organization whatsoever, and that individual aspirations must be subordinated to the welfare of the industry as a whole, the effort will not have been in vain.

No agency and no organization is of greater moment to the industry than the individual grower. In order to merit the confidence and support of the growers, any agency and any organization must have as its main incentive the perpetuation and expansion of the industry by affording the grower an adequate return and a reasonable profit for his fruit. Without such return to the grower the industry must eventually fail, and with it the agencies and organizations which depend upon the growers for their own existence.

There is evidence that the growers are giving serious thought to the present situation. Whatever may be the immediate outcome as regards the controversy between President Edwards and Manager Commander, there is reason to believe that the controversy now raging will develop into good for the grower.

## A LEADER HAS ARisen

There has been a marked change in the atmosphere at Washington since the inauguration of a new president on March fourth. Inaction has given way to action; passivity has ceased to be passive; adjustments have been made and are being made with lightning-like rapidity. The banking situation has been cleared up, economy measures have been approved, and confidence has been restored.

The immediate effect upon citrus growers has not been marked. Too many of our problems are of a purely local nature to feel immediately the effect of governmental policies. However, with the buying power of the people greatly enhanced, with banking facilities made available, with confidence restored, governmental economies in vogue and promised relief from threatened increase in taxes, the ultimate effect of the new program being put into effect in Washington cannot fail to have a beneficial effect upon citrus markets and a stimulating influence upon citrus prices in common with other agricultural and horticultural products.

The citrus growers of Florida, in common with their fellow citizens all over the land, hailed the "new deal" promised by President Roosevelt. They now hail with unqualified approval the energetic action of their new leader.

President John D. Clark of the Waverly Citrus Growers' Association is issuing weekly bulletins to the members of his Association, pointing out methods by which the growers may hope to benefit and dealing with problems of general interest to growers. These bulletins are in the nature of an innovation and are meeting with marked approval by the members of the Association.

One of the principal faults with this season's citrus markets (and we need not try to fool ourselves) is that our fruit as a whole simply hasn't measured up to market requirements.

# IMPRESSIONS

By Frank Kay Anderson

At a little after noon stopped by one of those little near-packing houses where they simply wash and polish fruit and sell in bulk to trucks. Several trucks were pulled up alongside for loading. On the platform a half dozen forms recumbent in the sunlight. We picked our way through, stepping over bodies that but for their breathing might have been dead. Two had their heads pillow'd upon truck cushions, the sissies; the balance slept soundly upon the hard boards of the platform. And how they slept. Nobody's patent mattress upon coil springs ever sponsored sounder slumber. That's what physical exhaustion will do.

Now, in common with a lot of others, we have been worried about the situation which has been brought about by the trucks and those other things which have somewhat disjointed our industry; but leaving that aside here was something to meditate upon. For those who have been complaining that we have become a nation of softies here was reassuring evidence of a hardening process which self-evidently had produced at least these visible examples of a hardness that was exceedingly hard. Maybe it requires hard times to make men out of male human animals. Wasn't it somewhat thus, and thus soundly, that those men who pioneered this country of ours slept when opportunity came to rest their tired bodies?

Tough stuff this business of running trucks. Seven days a week and seven nights to boot. One man at the wheel or otherwise at work while his buddy sleeps or rests. All this for an average of three dollars a day—two dollars for wages and one dollar for "found". Mostly young fellows these. Not much future in it, and not much present; but at least they are self-supporting and thus self-respecting. No dole for theirs. And that self-sufficiency which results from physical hardness is in itself something of a reward.

An old time citrus shipper, who now has been out of the game for a

long while, told of a recent trip he made to New York. "Down on the market," he said, "I never saw anything like it. Why it was just simply flooded with fruit, and such fruit! New York used to be our high class market, but most of the present visible supplies were of such low grade that a few years ago we wouldn't have considered sending such fruit even to a low grade market like Memphis. Florida has made the New York market over into another Philadelphia market, or maybe a few notches lower than the old Philadelphia market used to be. This flood of citrus to New York together with its average low grade has put New York prices away down; and yet New York prices continue to be the market barometer for the country at large. No wonder Florida citrus is worth no more today than it is."

Alec Steuart, comptroller of the Florida Citrus Exchange, hereinbefore referred to as Scotch, is very Scotch as a matter of fact. Being thus a Britisher and being also a comptroller, he ought to know all about the British monetary system. Naturally so. And he certainly does. Sitting around not long ago with a group of Amurricans, Alec was interrogated as to the precise meaning of the "d" as used in the British price quotations, as for instance, "3d," "6d," etc. He explained that used thus the "d" indicated pence or pennies. Pressed, however, as to why the "d" and not a "p" was thus used Alec didn't know the answer. The Amurricans kidded him unmercifully concerning his inability to answer a simple question of this nature. Alec went away rather grumpily. Hours later the telephone rang. One of the Amurricans answered it; it was Alec Steuart talking. "Say," he said, "that 'd' stands for 'denotes.'"

"Denotes what?" queried the Amurrican at the phone.

"Denotes pence," said Alec snapily, and hung up the receiver.

A box of Bob White oranges, exhibited by Theodore Strawn of DeLand walked away with the prize of fifty dollars cash for the single best

box of fruit shown at the Orlando fair. It's our impression that there is more to that incident than appears on the surface.

The late Theodore Strawn, father of the present exhibitor, used to be considered by many a "nut" upon two subjects. One was fertilizer formulae as used in his groves; the other was careful and precise packing of his fruit. As time passed, however, and fruit from the Strawn groves passing through the Strawn packing house at De Leon Springs had made a name for itself second to none in Florida, and was commanding regularly market prices up to if not ahead of the best Indian River fruit, many of these earlier scoffers sat up and took interested notice. The Strawn fruit does not come from a single grove with some exceptional soil qualifications. It comes from a series of small groves round and about DeLand and De Leon Springs. Why then should fruit from a Strawn grove regularly, year in and year out, be worth so much more in the markets than that from many other groves separated in many instances from the Strawn properties only by barbed wire fencing? That was the question being widely asked in the last few years prior to the death of Theodore Strawn, the elder.

Unfortunately we have not kept in touch with what the younger Strawns have been doing, but if they have been following in the pathway trod by the late Theodore Strawn, it is safe to guess that they haven't been experimenting with this that or the other freak scheme of fertilization; and it just may be that in that lies the answer.

By and large this year's Florida citrus crop has been the scrubbiest, of the poorest quality, of any within the memory of the men now selling the crop in the markets. To be honest with ourselves we must admit that; and then the sizes have been away off, too. Plenty as big as golf balls, and lots of little ones. Sure, we can blame the weather—in part. But just what part? What part was due to in-

digestion, malnutrition (due to unbalanced fertilizer diet) and even starvation in many groves? When we look at the trees, and the crops, in some groves we cannot help but think of the old gink who was so enthusiastic about the quantity of sawdust his horse could consume in lieu of feed; and then when just as he got the horse worked up to a 100 per cent sawdust diet the horse laid down one morning and failed to get up.

Just because citrus trees are long lived and slow to respond to either good or bad treatment they are called upon to stand often for experimentation that is far more radical than the experimenters imagine, because the results are not so immediate and readily ascertainable as is the case with field crops. Times are hard. Men just will believe what they want to be true, whether it actually is true or not. What wonder then that under such urge hundreds of thousands of our citrus trees have gone without essential plant food. It is easy to sympathize with the type of grower who knows what he is doing and goes about it sadly, who portions out the little which his depleted pocketbook will buy as a mother might to a family of half-starving youngsters. But it is not so easy to sympathize with that type which is inclined to brag of his economy, when all but he can see what is really happening to his trees and crop.

We reiterate our oft repeated denial. We are not a blooming horticulturist. We are of the third generation of Florida citrus growers, we get about a bit and observe; and, now with a pair of specs, we can read. We know that experiment stations in field-crop states have thoroughly discarded the old fertilizer theory that only N. P. K. are essential to complete fertilization. They have ascertained, and now proclaim, that there are other elements just as vitally essential. So even the "filler" in ordinary fertilizers isn't just "filler" after all. Denied certain of the rarer elements contained in the filler, even in infinitesimal quantities, tobacco and other field crops have dropped to as low as one-sixth of normal yields within a period of three to four seasons, so these experimenters of other states tell us. Are citrus trees exceptions to this, or is their longevity and slow response to soil treatment responsible for a delayed reaction that fools many?

A whole flock of transportation contacts within a single day. Mike H.

## THE CITRUS INDUSTRY

Dorsett, assistant freight traffic manager of the Atlantic Coast Line R. R., and Sherman Evans, assistant general freight agent of that same railroad. Then Kelly Tresher, poppa of the St. Johns River Line Co. Then lunch with J. Curtis Robinson, executive head of the Growers and Shippers League of Florida. Later, contact with Mr. Roth, general manager of the Fruit Growers Express Co. operating the refrigerator car equipment upon fourteen of our southern railroads. A lot of talk altogether. Out of it all we gather an impression that maybe isn't just an impression. Maybe it is a hunch. It's a hunch that out of all the present suffering and travail of our growers, and similarly of our transportation lines, we shall emerge ultimately to a place where instead of wasting a lot of time fighting each other, as in the past, grower interests and transportation interests will sit down for the amicable discussion of mutual needs. That will open a new era of working together for the common good. Lord, let it be soon!

Well, of all things. From Jacksonville Walter H. Klee, manager of Nitrate Agencies in Florida sends word that R. W. (Bob) Sims, manager in Porto Rico since 1929 is returning to Florida and will function as assistant to the said Klee here. We rejoice in that news, and we know a whole lot of Florida growers who will rejoice with us to see that famous Sims phiz hereabout again. When it comes to popularity Bob Sims has it. Sort of Clara Bow of the fertilizer world—maybe.

Of course the Porto Rican growers are entitled to have somebody over there managing Nitrate Agencies business, but we hate to hear that Charlie Braun, who has been the head of Walter Klee's staff at Jacksonville, is the guy selected to go over to Ponce and lead the afternoon parades around the plaza. We kind of like that Braun person. For quite a while have felt that if, on those occasions when we have foregathered in that Jacksonville office, we and Walter Klee didn't talk so unceasingly and so fast, Charlie Braun might have something quite interesting to say.

Roger Babson, no longer a citrus grower he says, recently recommended that the Exchange instead of being in disagreement with chain store buying practices, set aside funds to purchase a stock ownership in the big chains and thus control them. He says ten cents a box in five years would

March, 1933

do it. Just for fun we figured it out. Ten cents a box on the Exchange's handlings during the past five years wouldn't have bought enough stock in the biggest of the sixteen big grocery chains to have made itself felt. Besides it sounds like recommending to the tail that it exercise its rights and wag the dog.

Last month we wrote a lot about the things Frank Ostrander told us about conditions in Great Britain, but there was something we didn't mention, and it has been brought to mind strongly by some recent disclosures of big-time income tax evasions appearing in the papers. He said that following the ordinary American practice he called upon a firm of prominent English lawyers to advise him on how to reduce his British income tax. They wouldn't have anything to do with it. He tried others and they also refused. "It isn't done," was all he could get in the way of an answer. It is hard to imagine an American consulting four law firms in any given circuit and not finding one willing to aid in breaking or evading the law, for a proper consideration. It makes us wonder if perhaps the admitted higher efficiency of British justice isn't a reflection of . . . Well, you make the comparison.

The two Orlando daily newspapers recently have evinced considerable interest in citrus affairs. They are owned by a local corporation which in turn is a subsidiary of General Newspapers Inc. owning quite a string of papers in various places over the United States. Martin Andersen is an executive of that company and rates as publisher of the two Orlando dailies. He first came to Orlando a little over two years ago. Raised in Mississippi he had newspaper experience there, later a lot of newspaper experience in Texas. More recently he has been acquiring a great deal of experience in Florida. He is a likable fellow, aims to be constructive, and given time to learn what it is all about promises to be an asset to his section or Florida. In the meantime it is to be noted that Martin Andersen spells his name with an "e" . . . "No connection with any other institution of similar name".

Direct results of the banking holidays in other states apparently are finding reflection in our Florida citrus deal. As these lines are written we get reports of the withdrawal of financial support by northern sources from certain experimental, or other-

(Continued on page 18)

# Report Of Plant Commissioner For Biennium Ending June 30, 1932

## LETTER OF TRANSMITTAL

Gainesville, Florida,  
January 1, 1933.

Honorable P. K. Yonge, Chairman,  
State Plant Board of Florida.

Sir: I have the honor to present herewith my report as Plant Commissioner for the biennium ending June 30, 1932.

Respectfully,  
WILMON NEWELL,  
Plant Commissioner.

## Report Of The Plant Commissioner 1930-31 And 1931-32

The work of the State Plant Board as carried on during the biennium ending June 30, 1932, has been characterized by close attention to the duty imposed on the Board by the Plant Act: protection of Florida's agriculture from dangerous plant pests. This important duty may be subdivided under several different headings: (a) prevention of entry of such pests; (b) control and/or eradication, where possible, of major pests which may gain entry; (c) field inspection (grove and nursery) to determine the conditions existing in our plantings.

### Prevention Of Entry

Under this subheading is the protective work at the ports of entry of the state. This activity is one of joint effort on the part of state and national governments. Inspectors of the state hold appointments as agents of the Federal Bureau of Plant Quarantine and, as such, administer the rules and regulations of that division of the national government applying to the movement into the United States of plants and plant products. Inspection service is maintained at the six principal ports of entry: Jacksonville, West Palm Beach, Miami, Key West, Tampa and Pensacola. There are required fourteen Assistant Quarantine Inspectors to handle imports. During the year ending June 30, 1932, 6305 ships and airplanes arrived, were boarded and inspected. Of this number 3669 were from foreign ports, and 1339 of these were airplanes. On account of the generally depressed economic conditions traffic, both passenger and freight, has fallen off considerably. Passenger movement by airplane has, however, increased. The tabulation

given elsewhere shows in a statistical way the extent of the operations of the Quarantine Inspection Department.

### Control And Eradication

Despite the very best efforts of those engaged in the attempt to prevent entry of major plant pests, there is always the likelihood of alien invaders escaping the vigilance of our guardians. In that event when the establishment of the pest has been discovered, a determination must be reached as to the procedure to be followed. The adoption of an eradication plan involves the acceptance and carrying forward of measures of a drastic nature calculated to stamp out the pest with the least possible delay. Such a procedure may require a considerable period and the expenditure of large sums of money. Such expenditures are, however, amply justified when the industry threatened is of such magnitude as the citrus plantings of Florida. When the eradication efforts are carried forward to a successful conclusion as has apparently been the case in the two major eradication campaigns conducted in Florida, there is reason for congratulation and rejoicing.

The discovery of the Mediterranean fruit fly (*Ceratitis capitata* Wied.) in Florida in April 1923 created a tense, critical and threatening situation. Prompt and vigorous action upon the part of federal and state agencies, supported by growers and allied interests, brought about an early and successful conclusion. The history of this epoch-making combat was fully set forth in the last biennial report. Since the lifting of the federal quarantine restrictions in November, 1930, which officially marked the end of the eradication campaign, no evidence has been found of the presence of the Mediterranean fruit fly in Florida, although the field inspection forces of the State Plant Board have been constantly and vigilantly on the alert. Nearly \$7,000,000 (practically all from federal sources) of public funds were expended in this activity. Not only was Florida's huge citrus industry saved from the menace, but protection was likewise afforded the fruit industries of other states.

The second major eradication activ-

ity in which Florida has been engaged has been in connection with the malignant disease of citrus known as "citrus canker". This activity was initiated in 1914 by state and federal governments. This disease, a native of the Orient, was probably introduced into the Gulf States prior to 1912 on citrus nursery stock from Japan. The diseased conditions which manifested itself in citrus plantings was not recognized as of a serious nature until 1914-15 when growers and agricultural workers realized they were dealing with a new and destructive plant disease which did not respond to treatment and was of a most malignant nature. It soon became apparent that, as there was no known remedial measure, if the citrus industry was to be protected and preserved, resort would have to be made to the most drastic of all control procedures, namely, destruction of all plants affected.

The State Legislature of 1915 passed a horticultural law known as the Florida Plant Act of 1915 which created the Plant Board and empowered it to take necessary steps to protect horticulture. The legislature also made available funds for carrying forward a canker eradication program, as well as for general protective measures. The Federal Government recognized that a crisis existed with respect to the continued prosperity of the citrus industry and provided funds for the canker eradication campaign. The funds were handled through the Bureau of Plant Industry, but, under a working agreement with the State Plant Board, the Plant Commissioner (chief executive officer of the Board) acted in charge of field activities for both agencies.

During the years 1914 and 1915 little or no progress was made. In 1916 there was an appreciable improvement and in 1917 only 372 canker-infested trees were found. In 1918 the closest inspection failed to produce over 15 diseased trees, while in 1919 but 4 canker-infested trees were located. These results clearly indicate that eradication could be accomplished provided careful inspection were maintained over a relatively long period. Following the year 1919 were several sporadic

and localized recurrences. In 1920 at Boynton an infection was found in two adjoining groves and 520 diseased trees were destroyed. In 1922-23 a rather persistent localized infection was encountered at Davie, in the course of which 884 trees were found to be infected. In November of 1927, in a planting north of Fort Lauderdale, 85 infected trees were discovered.

Since the November, 1927, finding not a single canker-infected tree has been discovered. During this five years an intensive search has been made for diseased trees. All citrus plantings in the state have been inspected at least three times. All plantings in areas where canker had previously been found were inspected at least once a year. Nothing of a suspicious nature has been found. It is believed by the Plant Commissioner and his staff that citrus canker may be regarded as eradicated in Florida.

In the campaign to eradicate citrus canker there has been expended a total of nearly two and a half million dollars. Of this total there was derived from federal sources, according to the records in the Bureau of Plant Industry, United States Department of Agriculture, the sum of \$1,057,546.89. The State of Florida expended on this project, through the operation of the Grove Inspection (Citrus Canker Eradication) Department \$1,264,366.17. In the early days of the campaign the Florida Growers and Shippers League and allied interests furnished for use in the eradication activity, according to the best available information, \$85,019.62.

#### Field Inspection

The fact that the canker eradication campaign is regarded as having been successful does not mean that inspection of citrus plantings should be discontinued. There is always a possibility of a hidden or dormant infection being present, due possibly to reintroduction of the disease. There are also other major plant pests, not present in but threatening to invade Florida. We are constantly exposed to the introduction of such tropical pests as the Blackfly, the Green Scale, and various fruit flies. All of these are of major importance as plant pests. The safety of Florida's horticulture lies in a combination of field inspection and port inspection.

A very important part of field inspection—equally as important as that of grove plantings—is the supervision of the nursery plantings of the state. It is a well recognized fact among plant quarantine officials that pest-affected nursery stock is the most frequent and prolific means

of disseminating insect and disease pests. An undiscovered pest condition in a nursery may well serve as the focus for widespread and general pest distribution. This was the case with citrus canker. The object of nursery inspection is, therefore, two-fold: (a) to prevent wide and general distribution of major plant pests and (b) to see that the purchaser of nursery stock does not labor under the handicap of starting his planting with material affected by the more common minor pests. To accomplish these two objectives all states maintain nursery inspection and certification services. Florida, on account of climatic and other conditions which, although they are favorable to growth of plants, are equally favorable to the growth and development of pests, must maintain a very efficient nursery inspection service. It is thought that the greatest degree of efficiency, considering the cost, has been attained by our nursery inspection division. According to the statistical report of this department, which appears elsewhere in this report, Florida nurseries are inspected an average of four times a year. This is no little task when it is noted that there are, according to the records kept by the Chief Nursery Inspector, 1842 nurseries in the state under inspection as of June 30, 1932. These nurseries contain 5206 acres, with 43,575,332 plants therein. These figures do not include narcissus plantings, which are under inspection in order that interstate shipments of these bulbs may be made under the federal requirements. There are 175 narcissus plantings in the state, in which are 111,468,920 bulbs.

#### Entomology And Plant Pathology

The activities of the Board of an entomological and pathological character are so well and yet so briefly described in the last previous biennial report that we quote therefrom, in large measure, the following:

The Plant Board is primarily a regulatory or police organization, yet a certain amount of scientific work is done by specialists in order that the organization may function efficiently. The Entomologist of the Board and its Pathologist, with their assistants, make investigations and carry on research in the field of plant insects and diseases. They identify and classify these plant pests and devise ways and means for their control. During the fiscal year 1930-1931, 3696 specimens of plant pests were received from field inspectors and identified by these specialists. The number for the year 1931-32 was 5281. The Department of Entomology also produces and distributes a fungus

which effects control of the citrus whitefly. The same department rears and distributes Vedalia, a predatory insect which effects control of the cottony-cushion scale. The chief activity of the Department of Plant Pathology has been the study of citrus canker, an oriental disease affecting citrus trees and fruit which threatened the existence of the citrus industry. These investigations were discontinued August 31, 1931. The reasons for discontinuing this work were twofold: (a) the prolonged and intensive investigations had accumulated a large amount of important information regarding the behavior of the disease and the organism causing it which will now be available if and when needed; (b) inasmuch as the eradication campaign is now regarded as completed, it is not thought advisable to retain at Gainesville, even under the greatest safeguards, live canker material.

#### RECORDS OF INDIVIDUAL FRUIT TREES REVEAL POOR ONES, BULLETIN SAYS

Adopting the method long used by livestock breeders and more recently in citrus orchards, growers of apples, pears, peaches, and other deciduous fruits are now finding it profitable to keep records of individual trees to eliminate the unprofitable ones and to find improved strains or varieties. This new orchard practice is discussed in Farmers' Bulletin 1696-F, Deciduous - Fruit Improvement Through Tree-Performance Records, just issued by the U. S. Department of Agriculture.

Records of individual tree performance are especially valuable in orchards that have just come into bearing, the bulletin says, as they enable growers to cull out inferior or off-type trees that do not pay. Sometimes, also, records reveal limb variations from which improved strains or varieties may arise.

Another important value of the individual records is that they provide a good check on cultural methods, fertilizer practice, and other orchard work. The bulletin contains samples of forms suitable for keeping individual tree records and suggests plans for setting up such a system of records.

Fruit growers and others interested may obtain Farmers' Bulletin 1696-F from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 5 cents a copy. Stamps will not be accepted.

Check and double check for 4-H clubsters: They earn while they learn, and learn while they earn.

# For Sixteen Years

Ever since they were first developed in 1916, Fico products have been recognized for their effective and economical control of citrus insects and diseases.

Made with exceeding care and scientific exactness, growers everywhere have found that they "deliver the goods" in profitable fruit production.

Visit our modern plant and learn for yourself the secret of success of Fico products. Then you, too, will want to use them.



Right now experienced growers are using Fico lime-sulphur, or Fico dusting sulphurs, for scab and other grove insects. Or Stauffer dusting sulphurs which we also handle.

**Florida Insecticide Co., Apopka, Florida**

# 20,000 Acres Of It

It's not the quantity available, but the way in which it is produced, that is important about Florida Peat Humus—that makes it so good for crops.

Finely pulverized, absolutely free from weed and grass seeds and of harmful acids found in some muck, Florida Peat Humus is nature's own organic fertilizer.

It's not just muck—it is all humus. More than 90 per cent decayed aqueous vegetable mold, with approximately 4 per cent ammonia on a dry basis. For conditioning soils, it is unexcelled.

Now packed in 200-pound bales, for easy handling. If you want to see how good it is for crops, visit our demonstration farm at Zellwood.



**Florida Humus Company, Zellwood, Florida**

# Florida Agricultural Research Institute

## Starts Active Work

Fills Real Need In State's Agricultural Life

Florida fruit growers, truck farmers, and agricultural workers in general are giving a hearty welcome to the commencement of active work by the Florida Agricultural Research Institute, with headquarters in Winter Haven. While research organizations, such as the Institute, are new in the Florida field, similar agencies have been in existence in principal industrial and agricultural sections of the country for many years, and have been of inestimable value to producers and consumers along many lines.

The Institute is organized for, and set up by its members for the very broad and commendable purpose of making, or assisting in the making, of a more profitable agriculture and horticulture for Florida producers. Such a program embraces, among other things, the developing, searching out, and making public, what is considered by the Institute to be the most accurate and dependable information on plant foods and fertilizers, the best methods for use of same, improved practices along cultural lines and other data of a comparable nature that is substantiated by proven technical findings and practical experience in the field.

The Institute stands primarily and specifically for anything and everything that will enable the farmer and grower to engage more profitably in his line of production. The members of the Institute, as commercial firms, comprising what might be called "The Fertilizer Industry in the State of Florida" feel very keenly their individual and collective responsibility to their customers, and users in general of fertilizers and other agricultural materials. They know from long years of experience that a great share of this responsibility lies in protecting the agricultural public from unsound and dangerous recommendations that are made from time to time by "over-night" experts; persons who are inclined to have "hobby" ideas; and individuals or concerns whose sole thought is to "sell" something, regardless of need or merit. They believe that the farmers and growers as such are not in a position to take the time, or go to the expense for setting up the facilities for doing technical work; or making

practical adaptations of technical findings. The Institute believes that technical findings have value to the actual producers only when they can be adapted so as to enable commercial firms to embody them in practical form and make them generally available to the agricultural public. The members of the Institute feel this to be one of their greatest responsibilities to the Florida farmers and growers.

The Institute proposes to collect, and in turn disseminate to the public, information on plant foods, practical commercial mixtures of same, their application and general use under Florida conditions; to cooperate with and assist other institutions and agencies working for the good of the agricultural public; and to shield the growers from theories and untried recommendations that might be dangerous or destructive to producers income and property.

All data possible will be accumulated on practices that have been followed for long periods of time both profitably and successfully; with the hope of standardizing as nearly as possible many of the practices. The Institute has complete laboratory facilities available and will do such work with its own staff from time to time as it deems best.

In order that the Institute may be of the greatest good to the largest number of people, it solicits for itself the active, friendly cooperation of all the growers and farmers, and others who are interested in a more profitable Florida agriculture.

The members of the Florida Agricultural Research Institute, (consisting at this opening of eleven of the principal fertilizer companies operating in Florida) are established concerns that have been taking an active part in the State's life for many years. The investments of these companies in Florida runs into many millions of dollars and include vast investments in mill, factory and mining equipment, and a tremendous acreage of phosphate and other lands. Many thousands of acres are devoted to active production along agricultural and horticultural lines. The annual payroll of the Institute members is a very important item in

the State's economic life; and due to the extent and value of the property, plants, equipment and machinery, the annual municipal, county, state and federal taxes run into tremendous sums of money. All properties of these companies are on the active tax rolls and money collected from them is always promptly available for operating expenses of the State and its various units. The members of the Institute through their dealings in tremendous quantities of materials, both export and import, also play an important factor in associated industrial activities and labor payrolls in the State.

The members of the Institute actually ship directly to Florida growers over seventy-five percent of the total State fertilizer tonnage.

From the above, it may be readily seen that the members of the Institute have been, and will continue to be inseparably tied up with the general progress of the State, not only in their current operations, but in their permanent life as well. They represent a very important and tremendous part of the State's industrial life, and they have created the Florida Agricultural Research Institute as further evidence of their desire to serve and their sense of responsibility to the agricultural public.

The purposes of the Institute can not be styled selfish, but are prompted by the knowledge that only as agriculture prospers can the industry itself succeed.

There are many important and  
(Continued on page 18)

### FOR SALE

Lists of Florida Citrus Growers compiled from recent survey of groves, arranged by counties. Name, address, acreage and legal description.

Also list wealthy residents of Florida.

W. L. Lamar  
P. O. Box 333  
JACKSONVILLE, FLA.

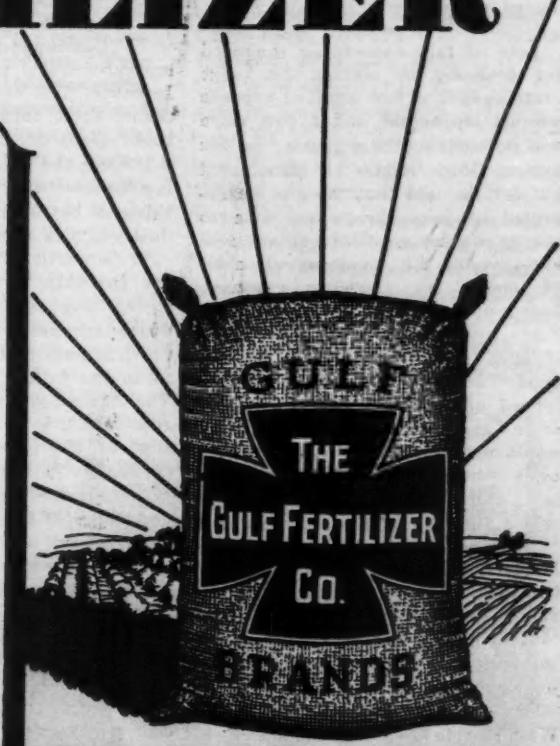
# For Lasting Soil Energy *use* **GULF BRANDS of FERTILIZER**

Upon the condition of your soil depends the health of your trees — the success of your crops — the amount of your profits. Avoid combinations of fertilizers that deplete your soil and eventually diminish your net returns. Play safe with Gulf Brands. They are scientifically blended to insure maximum soil energy.

The Gulf Field Man will help you find out what your soil really needs. Consult him freely.

**THE  
GULF FERTILIZER  
COMPANY  
TAMPA, FLORIDA**

Lake Wales Bradenton Winter Garden  
"Winter Haven



Gulf Brands are  
"Standard Brands"—Plus

## IMPRESSIONS

(Continued from page 12)

wise unorthodox, citrus shipping operations in Florida. Also there are whisperings of the repudiation of several purchase contracts for the crops of large growers earlier made by Florida shipping concerns thus affected.

When a grower insists upon believing what he wishes to believe and makes the sale of his crop to an irresponsible, and more or less "dummy" corporation, and later the deal turns out unfortunately to the buyers, it is usually the grower who is left holding the bag.

If we had a functioning general growers' organization, it ought to be possible to blacklist individuals connected with crop purchasing corporations where those organizations more or less deliberately flunk out of purchase contracts, to avoid possibility of those same individuals later imposing upon other growers under cloak of some new and differently named corporation.

Lots of talk concerning the need for economy in making our next State budget. A few items of expense will be lopped off and a few more will be curtailed to a greater or less extent. More might be anticipated but for the fact that those to be deprived of jobs always are able to stir up a noisy opposition to any real curtailment. We could suggest a lot of places for reducing expenses, based upon our observation of our State government, but it is doubtful if such suggestions would do any good. Two items of expense could be lopped off entirely, we believe, and after three months the services would not be missed. Station WRUF costs over \$80,000 a year to maintain; and at its best it is not properly a function of State government to provide entertainment. The State Marketing Bureau costs over \$100,000 yearly, and its services cannot be valued that highly. It has existed up to now because upon the Peninsula it has been felt that the bureau was of some value to the general farmers in other sections, while in North and West Florida there was the misapprehension that the bureau was rendering service to the citrus growers of the Peninsula.

A few years ago while hunting down on the edge of the Big Cypress Dr. E. R. McMurray, the well known physician and grove owner of Bartow, had an unusual experience. He heard a rustling and along came two

## THE CITRUS INDUSTRY

bears. A big bear in the rear was holding in his mouth the tail of a little bear which was in front. Doc McMurray fired and missed. The little bear ran away. The big bear bumped into three or four trees and then sat down and howled. Later investigation showed that the big bear had defective eyesight, hence the conclusion that the little bear was his grandson and was taking him out for a walk. The big bear became quite tame and hung around the camp to be fed. A few days afterward Dr. McMurray fitted the big bear with glasses. The bear was very grateful, and since that time, it is said, hunters can no more than make camp in the vicinity before the big bear, still wearing his glasses, reports for duty and stays about camp until they depart. This has all the earmarks of a yarn, but since it is confirmed by those two noted Glades hunters, Lat Maxcy of Frostproof and Hugh Wear of Bartow, we, for our, part, are willing to accept it as a fact.

## THE FLORIDA AGRICULTURAL RESEARCH INSTITUTES STARTS ACTIVE WORK

(Continued from page 16)

critical cultural problems before the Institute. The object will be to sift theory from fact and to search for those methods and practices which will bring the greatest and most lasting benefit to the grower, in turn this will be to the benefit of the industry.

It is particularly the purpose of the Institute to refrain from sponsoring any movement or practices which are not forward looking and which are not economical to the grower in the fullest sense of the word. The whole purpose, summed up in a few words, is to make this association of Florida's leading fertilizer consumers, a thing of real value to the State and to secure for it the confidence of the public by reason of its practices and pronouncements.

Further, while the direct object is for the improvement of the industry, there is no idea except that the improvement is coming as a reward of service to the consuming public.

## VAN DINE TO HEAD U. S. RESEARCH ON FRUIT AND SHADE TREE PESTS

D. L. Van Dine, until recently an entomologist with the Tropical Research Foundation in Cuba, has been selected to head the Division of Fruit and Shade Tree Insects of the Bureau of Entomology, U. S. Department of Agriculture, the department announced recently.

March, 1933

This appointment relieves Dr. C. L. Marlatt, Chief of the Bureau of Entomology, of the direction of Federal investigations on the insect enemies of fruit and shade trees. These investigations, which bear directly on the problems of fruit growers throughout the United States, are conducted by a corps of specialists in Washington, D. C., at 22 field stations in this country and at one in Mexico.

A graduate of Cornell University, Mr. Van Dine was a member of the Bureau of Entomology from 1909 to 1910 and again from 1913 to 1922 with a year off for military service in 1918. He resigned to accept a position with Pennsylvania State College and in 1924 joined the staff of the Tropical Research Foundation.

## PLANT DISEASE WORKER VISITS FLORIDA AGENTS

Dr. R. J. Haskell, extension plant disease specialist with the U. S. Department of Agriculture, is spending two weeks in Florida visiting county agents and other workers with the Florida Agricultural Extension Service. He is discussing with the agents the coordination of their work to better help the farmers out of their present situation, and is giving them valuable suggestions from other sections of the country.

He and other workers with the Department of Agriculture regularly make such trips to the state.

Buyers get more goods and less package for their money when they buy one large package instead of many small ones.

# The Improved RIVERSIDE Truck-Deciduous- & Citrus Heater

*It Kills Frost at little Cost*

MILLIONS

*Are in Use...*Write for  
Descriptive MatterRIVERSIDE SHEET METAL WORKS, INC.  
RIVERSIDE, CALIFORNIA

D. V. Webb — Sales Agent  
61 W. Jefferson St., Orlando, Florida  
Stock of Heaters Now  
On Hand at Orlando

## WHAT OUR READERS THINK

### THE TRUCKS AND THE RAILROADS

Leesburg, Florida  
January 2nd, 1933

Mr. Frank Kay Anderson  
Tampa, Florida.

Dear friend Anderson: — I have been interested, of late in a few of your articles on railroads and truck transportation. This is a big proposition, or condition to solve, but cannot be done by fighting, must apply business methods. However the truck and auto are not doing the fighting, just doing business.

The railroads and the trucks are both providential, here to stay, cannot live without them. The people really built the railroads, and then the R. R. antiquated the wagon and the canal, and other water transportation, also suburban lines. Now the people have built the highways, and the auto and truck have antiquated the railroads. The railroads must improve their business methods. Cut operating expenses 30 to 40% and salaries accordingly.

I note the fight practically on the truck, but in my opinion the autos have hurt, or cut income, as much or more than the truck. The greatest menace to the management R. R. are the Unions, as they practically dominate the roads, and also destroys efficiency in service.

As you know I was in the R. R. service for twenty years or more, in the transportation department of the B. & O. Hence am in sympathy with the railroads.

The officials must change their business methods, but few of them have any business ability. Have just given you my experience in a very brief and crude manner. I want to congratulate you on your splendid magazine. Wish you a prosperous New Year.

One other point I over-looked. The trucks are not battling against the R. R. really have a kindly feeling for them. They are giving better service in almost every particular and the people are giving them their business hence the people instead of the trucks, are to blame.

Would be pleased to hear from you again, sometime. Kindest personal regards.

Very truly yours,  
W. S. McClelland.

Robert R. Strawn  
tells his  
Experience



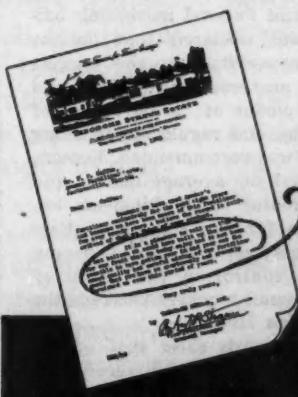
## "Continuous Use of Your Quality Fertilizer is Largely Responsible for Our Success"



Here, in this letter, is real enthusiastic praise. It comes to us from a regular user of Armour's BIG CROP Fertilizer. It is one of the hundreds of such letters received by us each year. But we are particularly proud of this letter because we know what Mr. Strawn means when he refers to quality. His idea of quality is represented by the famous "Bob White" Brand and we are delighted to have him give part of the

credit for his success to Armour's BIG CROP Fertilizer.

Successful citrus growing calls for real skill; but a good portion of the battle is won when you select the right fertilizer. For that reason we call your particular attention to what Mr. Strawn has to say about results obtained with Armour's BIG CROP Fertilizer. The fact that his company has been a consistent user of Armour's BIG CROP Fertilizer for twenty years and still depends upon it is what we consider the finest endorsement we could secure. As an advertisement we feel his letter speaks for itself. Read what Mr. Strawn has to say:



"I do not believe we could have built up the demand for our fruit that we today enjoy had it not been possible to have gotten year in and year out the exact quality and careful mixing of our fertilizer goods that you have so courteously and promptly furnished us over this period of years."

## Armour's BIG CROP FERTILIZERS

Our field representatives will gladly make recommendations  
based on the requirements of your crops.

ARMOUR FERTILIZER WORKS  
JACKSONVILLE - FLORIDA



## Motor Trucks Hauling More Farm Products

Motor trucks are hauling an increasing volume of farm products, according to reports of field representatives of the Bureau of Agricultural Economics, U. S. Department of Agriculture.

In the East, the situation is most observable in the many truck loads of Florida citrus fruits that are being retailed by truckmen-peddlers along the highways from North Carolina to Massachusetts. Carlot receivers, wholesalers, and retailers of farm produce in practically all markets are complaining of the truck competition.

The bureau's market news representative at Chicago has reported that "truck receipts are becoming an important factor in the Chicago potato market, and local carlot receivers are inclined to view the situation with some alarm, as it is cutting in on their business." In one day, recently, thirty carloads of potatoes reached Chicago in motor trucks, principally from Michigan and Wisconsin.

"This stock," the bureau's representative continues, "is delivered to the jobbers' stores at about five cents per hundredweight less than the local carlot price. Taking into consideration the five cents per hundredweight drayage cost, it means that jobbers are able to buy trucked-in stock at about ten cents per hundredweight less than carlots on track. Carlot receivers can not meet this competition without a loss. Fully 75 per cent of the trucking is by growers and by small truckers with headquarters in producing areas."

"Unemployment," he concludes, "has no doubt contributed materially to the huge increase in truck movement, but the swing has been increasing rapidly each year, both as to tonnage and length of hauls. Unless some way is devised for obtaining at least a fairly complete record of truck movement of the various fruits and vegetables, the value of our rail and boat shipment figure will become impaired more and more each year."

The government marketing officials are interesting in the latter phase of the situation. Prior to the advent of motor trucking, they had built up practically a 100 per cent accurate news service on the quantity of fresh fruits and vegetables moving daily from shipping points. This kept farmers, dealers, and wholesalers informed as to quantities received and to be received by rail and boat in

consuming markets, and it was possible to divert shipments to prevent market gluts and famines.

No satisfactory method has been developed to keep track of motor truck shipments rolling over a network of highways, and trading in important consuming markets is at times demoralized by the unexpected receipt of motor-trucked produce. Car-lot receivers at New York, Philadelphia, Boston, Chicago, and many other large markets complain of this situation.

A bureau representative at Grand Rapids, Michigan, recently reported: "Truck movement (of potatoes) is very heavy. Truckers, in addition to supplying the Detroit market, are now reported as supplying Chicago with liberal receipts. The continued and effective competition of truckers is creating a very serious problem for the rail shippers. Not only are the truck operators taking the tonnage away from the rail shippers, but they also operate on so small a margin that they can pay more and sell for less, so that the established potato firms are losing most of the margin of profit in the business they are handling."

At a recent Washington meeting of State and Federal marketing officials it was declared that "motor truck transportation is the biggest marketing problem in all States," and the development of "some means of coordinating and regulating trucking facilities" was recommended. Reports indicate that the average quality and grade of motor truck shipments are lower than for rail shipments. Carlot shippers contend that placing marketing control in the hands of numerous small truckers weakens the market price situation.

Bureau records show that of the total fruit and vegetable receipts in eight large markets during the first 11 months of 1932, 36 per cent came by truck, compared with 29 per cent in 1931 and 25 per cent in 1930. The importance and growth of the motor movement are evidence that many growers believe it is to their advantage to market by truck.

Many growers say they favor motor truck marketing because it affords a direct method of shipment from farm to store door or customer, often at less cost than rail shipments; it saves time on short and medium dis-

(Continued on page 24)

### BROGDEX PAYS

The New York auction prices for February show market buyers prefer Brogdexed brands and pay premiums for them. The following figures give the daily sales prices for the month as reported by the New York Daily Fruit Reporter, official organ for that market.

ORANGES			
Date	Brog.	non-B.	Diff.
1	\$2.45	\$2.17	\$.28
2	2.78	2.10	.68
3	2.86	2.60	.26
6	2.88	2.27	.61
7	2.58	2.17	.41
8	2.89	2.37	.52
9	2.95	2.20	.75
10	3.10	2.21	.89
14	3.17	2.25	.92
15	2.88	2.34	.54
16	2.73	2.30	.43
17	2.86	2.36	.50
20	2.94	2.30	.64
21	2.35	2.18	.17
23	2.46	2.15	.31
24	2.24	2.05	.19
27	2.36	2.19	.17
28	2.53	2.10	.43

GRAPEFRUIT			
Date	Brog.	non-B.	Diff.
1	2.49	1.80	.69
2	1.97	1.89	.08
3	2.12	1.77	.35
6	2.37	2.04	.33
7	2.14	2.05	.11
8	2.33	2.05	.28
9	2.19	2.15	.04
10	1.92	2.10	-.18
14	2.35	2.11	.24
15	2.51	2.04	.47
16	2.28	2.05	.23
17	1.81	1.94	-.13
20	2.13	2.19	-.06
21	2.43	2.04	.39
23	2.48	2.03	.45
24	2.44	2.04	.40
27	2.20	2.20	.00
28	2.36	1.88	.48

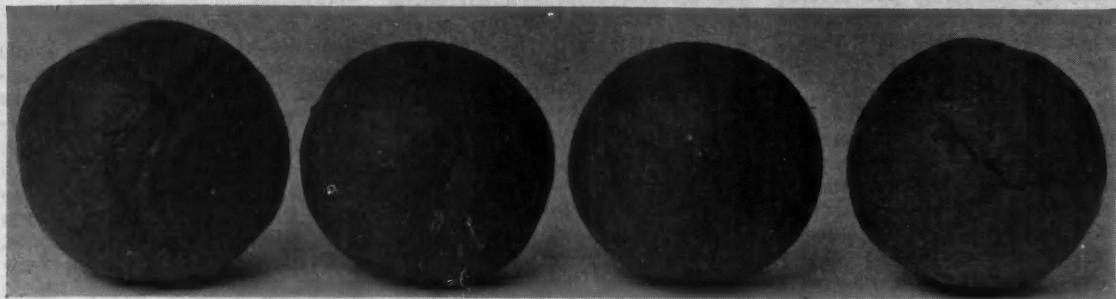
\* Represents only sales in which Brogdexed fruit did not get a premium.

These better prices, important as they are, constitute only a part of the benefits from Brogdex. By reason of the better shine obtained under the Brogdex System of washing and polishing more fruit will grade out No. 1's than would otherwise be possible. Refrigeration is not necessary to make sound delivery with the straps still tight. Opening up a standard vent car of Brogdexed fruit finds the wraps dry and the original shine still there. That means better appearance on the sales floor. But perhaps the most important service Brogdex renders is that it holds fruit sound and fresh in the hands of the dealer. If the returns you are getting are not satisfactory pack the balance of your fruit through a Brogdex house—there is one near you.

**FLORIDA BROGDEX DISTRIBUTORS, INC.**

B. C. Skinner, Pres.  
Dunedin, Florida

# INTO THE CULL BIN GO THESE



## POTASH-HUNGRY ORANGES

ASK your packing house man to tell you about the number of culls he has to throw out because of creasing and cracking of the rinds. This poor quality is very prevalent in recent seasons among oranges which received an unbalanced fertilizer containing little or no potash.

Potash-hungry trees produce a slender vegetative growth which results in poor yields of rough, coarse, low-quality fruits. Many of these must be disposed of at a loss either at the packing house or by the merchant who attempts to market them.

Potash is the quality-producing element in citrus fertilizer. Well-balanced fertilizer with 10% potash develops the proper growth and texture and finishes your fruit into the top grade. It is your

best insurance of regular crops of high-quality fruits.

The best way to build the market for Florida citrus fruit is to produce fine quality from your own grove. Potash increases your yields of well-shaped, juicy fruit with a smooth rind that is thin and tough. This fruit stands up better in shipping and arrives on the market in prime condition to attract the consumer.

Do not be satisfied with low-grade, unbalanced fertilizer. This is false economy. Select and use fertilizer containing at least 10% potash. Use this in at least two regular applications, or better still, use it every time you fertilize your trees.

**N. V. POTASH EXPORT MY., Inc.**  
Hurt Building, Atlanta, Ga.

J. L. Baskin, Representative, P. O. Box 1051, Orlando, Fla.

### MAKE SURE YOUR FERTILIZER CONTAINS AT LEAST 10% POTASH

1 Citrus fruits remove from the soil more potash than both nitrogen and phosphoric acid combined.

2 Nitrogen produces volume, phosphoric acid maturity, but potash adds the quality that gets the best prices. All three are de-

manded in a well-balanced fertilizer to keep up the producing power of your grove.

3 Potash is the quality-producing element in your fertilizer. It develops smooth tissues, fine grain, heavy sugar content and causes your fruit to put on excellent finish.



**EFFECT OF LEAD ARSENATE  
INSECTICIDES ON ORANGE  
TREES IN FLORIDA**  
(Continued from page 7)

in Florida in 1926 established that only the part of the tree sprayed was affected. Examinations of sprayed trees showed that the fruit in the tops of the trees, which could not be reached by the spray, was normal, whereas that on the lower branches was considerably affected. This is shown in Table 2, which is condensed from a table in the article cited.

Trees that were dusted with 90 per cent sulphur and 10 per cent lime and lead arsenate were affected just as were those that had been sprayed, as shown in Table 3, which is from another table in the same article by Yothers.

Yothers reported that mature picked fruit can not be changed by immersion in a lead arsenate-mixture.

In 1927 Hawkins and Barger corroborated the results of previous workers in the use of arsenic on citrus and advised against its general application for the purpose of hastening fruit maturity.

In 1927 Copeman, in South Africa, investigated the use of arsenical and other materials on citrus fruits and found that arsenic reduced the acid in the fruit but that there was no significant change in the sugar content. He concluded that the effect was systemic and that the fruit was affected through the leaves. The quantity of arsenic used per tree by Copeman was apparently less than that used by Juritz.

Takahashi, working in Japan, published a paper in 1928 in which he reviewed most of the previous work on arsenic. He corroborated the findings of other workers as to reduction of acid and increase of sugar in navel oranges on arsenical-sprayed trees, as shown in Table 4, which is taken from the article cited.

Takahashi found that the effect persisted for more than one season and stated that small fruits were more affected than large fruits. No attempt was made to explain how arsenic affected citrus trees, although the opinion was expressed that it was through the root system.

In 1931 Copeman published a very comprehensive study of the effect of arsenic on the ripening of fruit, in which he confirmed, with additional evidence, the points mentioned in his previous paper.

In 1929 Singleton, in Florida, stated that lead arsenate used in the proportion of one-half pound to 200 gallons had a very desirable effect on citrus fruit, but that when used at a greater strength it was quite unsat-

isfactory.

Work done in 1929 by the senior author and McBride, which was reported in part in 1931, showed that when the fruit itself or the leaves of the branches immediately surrounding the fruit were sprayed the fruit was affected. Dipping the small green fruit on an unsprayed tree in lead arsenate suspension affected it just as would the spraying of the foliage, and when the fruit was protected by a paper bag and the leaves around it sprayed the fruit was not affected.

In 1932 Nelson and Mattern reported the results of the analysis of oranges, sent to them by the Orlando laboratory, which had been sprayed with lead arsenate bait spray. Their analysis showed that these were very low in acid and also low in sucrose. An important point, however, is the fact that in oranges heavily sprayed with arsenic the vitamin C content was reduced considerably. These writers also reported that the arsenic content of the edible portion of the orange was not changed by spraying the tree with heavy doses of lead arsenate.

**Method of Investigation**

Work on this problem was undertaken with the idea of determining how arsenical insecticides affect trees and fruit. Other workers have pointed out clearly that arsenic does not affect citrus fruit through the leaves or trees, but have told practically nothing about the extent of effect from various quantities.

In order to determine whether or not arsenic may produce the effect through the soil instead of the leaves large quantities of lead arsenate were applied to the soil under orange and grapefruit trees, and analysis of the soil, fruit, and foliage were made at intervals for two and one-half years afterwards.

In all the spraying work only half of a tree was sprayed, and the remaining half was used as a check. The unsprayed portions of these trees were compared with the adjoining trees that had not been sprayed, and no difference could be detected other than small differences attributed to the normal variability of trees. The unsprayed half of a tree was always used for a check on the sprayed half, and in this way individual tree differences were eliminated.

**Arsenical Determinations**

Orange trees were sprayed with various quantities of acid lead arsenate, and at intervals of one month quantitative determinations were made of the water soluble and insoluble arsenic remaining on the leaves.

**Respiration**

Twigs from the same group from which the arsenical determinations were made were placed in respiration chambers and the quantity of liberation carbon dioxide measured. After this the relation between the arsenic present on the leaves and the quantity of carbon dioxide liberated was worked out.

**Catalase Activity**

Other leaves from the same group were used for determining the quantity of catalase present in leaves on which the various quantities of arsenic were found.

**Fruit Analysis**

Fruit samples were taken for analysis from the trees that had been sprayed with arsenical insecticides, and determinations were made of the arsenic present, as well as of the relation between this chemical and the respiration and catalase of the leaves. When the fruit was quite small, approximately 25 to 30 mm. in diameter the hydrogen-ion concentration was measured electrically. As soon as enough juice was available the percentage of soluble solids was determined by a Brix hydrometer and the acid by titration with the standard alkali.

(Continued next month)

**THE PEDDLER TRUCK SITUATION IN REGARDS TO FLORIDA FRUIT AND PRODUCE**  
(Continued from page 6)

that he has been using for years, and also extra boxes thrown in, so that many times the packing house gives away fifteen to twenty percent extra fruit. This means that the grower loses because the fruit would have packed out five boxes but he is only paid for four. The packing house loses because it runs five boxes, but is only paid the house charges on four.

It has been found that the average trucker will buy his fruit in inexpensive containers such as the bulk boxes now being used over the state, providing the manager or house foreman will take the time and interest to sell him on the proposition.

The advantages to the trucker having fruit in containers are many, and among them these stand out:

**FIRST**—He can put a large load of fruit on his truck, and carry it to market in perfect condition, and will not have the bruised and rotten fruit which he finds in the bottom layers of his truck after he has sold off the top and middle layers.

**SECOND**—He can draw up to the store to which he sells his fruit, show the manager the boxed fruit in the same size container (1 3-5 bushel)

(Continued on page 26)

# Horticultural Society Promises Fascinating Meeting

By F. M. O'BYRNE

The forty-sixth annual meeting of the Florida State Horticultural Society in Lake Wales will be both fascinating and instructive as well as highly entertaining.

The program which will be found elsewhere in this issue, will be interspersed with musical numbers. These will permit the members to get more from the next address than if one address followed closely on another.

The Florida Rose Society will hold its annual Rose Show in the Dixie Walesbilt on Wednesday and Thursday. Entries of cut roses are solicited from all and may be made until 10:30 A. M., Wednesday, April 12th. The Rose Society will hold its meeting in the Walesbilt Wednesday afternoon while the Horticulturalists are meeting in the High School Auditorium.

After the Horticulturalists adjourn Wednesday afternoon, they will visit a number of groves in the Lake Wales vicinity in which various types of irrigation will be demonstrated in actual operation. There will be the flooding type using conductor pipe, the conductor type sprinkling method, a moveable sprinkler method using one inch rubber hose and an overhead

system with a permanent installation.

Thursday afternoon there will be but one address after lunch, an illustrated lecture on how to top work citrus trees and then the Horticulturalists will tour the Mt. Lake Corp. property ending at the parking area where they will hear a Carillon concert dedicated to the Society. After the concert they will be given a demonstration of the rapid method of spraying developed by R. H. Linderman, resident manager, which has reduced their spraying cost to one third its former amount.

Horticulturalists are urged to bring their wives for they will be splendidly entertained by the ladies of the Lake Wales Garden Club who will conduct tours of the beautiful gardens in this vicinity, Wednesday and Thursday mornings. They will also tender a garden party to the visiting ladies Thursday afternoon, April 13th following the concert. This will be a wonderful opportunity for the ladies to see the many beautiful gardens which they probably never would have the opportunity to see otherwise.

Interest in the Horticultural Soc-

iety meeting is heightened by the fact that its meeting occurs simultaneously with the convening of the State Legislature. It gives growers an opportunity to express their desire for legislation affecting them and it gives the legislature the opportunity of learning what growers want. The Horticultural Society is the only organization that truly represents the vast majority of growers regardless of their marketing affiliations.

A glance at the program will show that a number of points will be discussed upon which the legislature will undoubtedly be asked to take some action. The question of hastening maturity of fruit will come up for discussion as will also the bulge pack. Taxation of cut over lands will doubtless be discussed and many similar problems involving legislation in which the grower is vitally interested.

All in all the forthcoming meeting of the Horticultural Society promises to be important, highly instructive and extremely interesting for both growers and their wives. A local committee under the direction of the writer is leaving no stone unturned to make the meeting a success.

## ACTIVITIES OF HOME AND COUNTY AGENTS COVER MANY FIELDS

County and home demonstration agents aid Florida citrus growers, farmers and farm women to grow better crops at less expense, to control disease and insect pests more economically, to improve their livestock along safe, progressive lines, to enjoy a satisfying home life, and to make more money, said Dr. Willmon Newell, director of the Agricultural Extension Service, in a radio talk recently. At the same time they assist in training rural boys and girls in better farming and home-making activities, he said.

The agents quickly disseminate information of improved practices developed as a result of agricultural and home research, or on farms and in the homes of the country. Through demonstrations on farms and in the homes which show the worth of these practices, through group meetings press articles and personal confer-

ences, the agents assist citrus growers, farmers and farm women in lowering costs, increasing returns, and improving home activities, he said.

Last year the 35 county agents in Florida visited 16,287 farms, and 62,668 persons called on them for help. Likewise the 26 home demonstration agents helped housewives in canning 763,602 quarts of farm products, in making articles at home which they sold for \$213,793, in planning economical meals, in clothing the family, and with other problems just as vital.

The agents all over the state have been local advisers to relief agencies in planning community and self-sustaining gardens. In like manner, they have helped farmers secure needed government seed and crop production loans.

In times such as the present, when adjustments must be made, when crops must be produced for less, when there are huge surpluses of some crops, and when growing a living at home is so vital, the county and home

demonstration agents are proving their value more than ever before.

Cooperative Marketing of Farm Products is the title of Bulletin No. 10, recently issued by the Federal Farm Board. It contains pertinent information of value relating to conditions under which cooperative marketing associations may reasonably expect to succeed.

Florida county and home demonstration agents last year made 52,288 visits to farms and rural homes in the interest of better farming and homemaking, their reports to the Florida Agricultural Extension Service show.

Actual demonstrations of how to do some better practice on the farm or in the home were given at 9,072 meetings last year by Florida county and home demonstration agents. The total attendance was 153,729, reports from the agents show.

## CITRUS BLACKFLY MET AND WHIPPED IN CUBAN GROVES

Gainesville, Fla.—The citrus blackfly, which has been knocking at the door of Florida since 1918, is no longer as serious a menace with the successful introduction into Cuba of three parasites which have about wiped out the blackfly, Dr. E. W. Berger, entomologist with the State Plant Board, explained in a recent address.

The blackfly is native of the Far East where it preys upon citrus, mangos, guavas, avocados, and other plants. Several years ago it became a serious pest to the citrus industry of Cuba, and since then has been feared by Florida growers and entomological workers. The blackfly is a relative of the common whitefly and, like it, lives on the underside of the leaves. Spraying has proven of little value due to the easy dissemination of the pest and its large number of host plants.

Since January, 1918, State Plant Board inspection records show that the blackfly has been found 123 times in shipments entering Florida, mostly from Cuba. Fearing that this rigid port inspection might not continue to

## THE CITRUS INDUSTRY

keep the pest out, Dr. J. H. Montgomery, and Dr. Wilmon Newell, of the Plant Board, started negotiations in 1928 with the Cuban government and U. S. Bureau of Entomology in the hope of introducing into Cuba blackfly parasites known to exist in the Far East.

Agreement was soon reached that Cuba would furnish \$10,000 to meet the expenses of the project and the U. S. Bureau of Entomology would provide the specialists to do the work. A worker was sent in search of parasites in the Far East, and another was sent to Cuba to try the introduction of these parasites.

A small wasp-like parasite and two ladybeetles were successfully introduced, and the parasite has well demonstrated its usefulness in Blackfly control. In frequent instances it has given a 75 per cent clean-up in badly infested groves.

With the blackfly controlled in Cuba it is not as likely to get by Florida port inspection, and in case it does the entomologists know the effective weapon with which to fight it.

Florida farm women and 4-H club girls last year, under the leadership of home demonstration agents, marketed products which they had made

or grown at home with a total value of \$213,793, reports from the women to the agents reveal.

About one-fourth of the orange and grapefruit trees now growing in the United States were planted in the last five years, and therefore are normally not of bearing age.

## MOTOR TRUCKS HAULING MORE FARM PRODUCTS

(Continued from page 20)

tance hauls, making it possible to get the product to the consumer in fresh condition; it enlarges marketing outlets and finds new customers; it reduces packing expense; it decreases marketing risks by encouraging cash sales at the farm.

Nowadays fruit and vegetable growers located in a populous area may sell at retail from a roadside stand, and the motor truck peddler may drive five hundred miles away to return with a load of produce that he may sell in job lots in large city markets, to retailers in small country markets, or he may peddle along the highways and city streets.

In writing advertisers please mention The Citrus Industry.

## You Cannot Afford to "SKIMP" —in fertilizing your groves.

### CITRUS TREES MUST BE FED!

MANY growers, as a measure of economy, used only nitrogen on their groves last summer. These trees need phosphoric acid and potash as well as nitrogen, and should receive a liberal application of Ammo-Phos High-Analysis Fertilizer this spring.

As a matter of fact, even if you gave your trees an application of complete fertilizer last summer, they will need additional plant food this spring, since citrus trees require large amounts of plant food annually to produce high yields of high-quality early-maturing fruit.

**HUNDREDS of GROWERS THROUGHOUT FLORIDA  
USE AMMO-PHOS HIGH-ANALYSIS FERTILIZERS.  
—RESULTS SPEAK FOR THEMSELVES!**

Won't you call on us personally at one of our stores or write Mr. J. B. Berry, Winter Haven, Florida, outlining your particular production program. We are sure we can help you analyze and solve your fertilizer problems.

**THE KILGORE SEED CO., Plant City, Florida**

Kilgore Stores located at Plant City, Belle Glade, Gainesville, Homestead, Leesburg, Miami, Pahokee, Palmetto, Pompano, Sanford, Vero Beach, Wauchula



AMMO-PHOS High-Analysis Fertilizers  
Contain More Than 30% Plant Food

## COLOR or BLANCH

MATURED FRUIT AND  
VEGETABLES WITH

### ETHYLENE



Every grower and shipper  
should have this FREE book which shows how  
Ethylene

- 1. INCREASES PROFITS
- 2. REDUCES LOSS
- 3. SAVES TIME
- 4. SAVES MONEY

### 5. IS NEITHER INJURIOUS NOR DANGEROUS

### 6. IS EASY TO USE

Buy from the largest supplier of  
Ethylene to the citrus industry

## CARBIDE AND CARBON CHEMICALS CORPORATION

30 East 42nd St., New York City

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Unit of Union Carbide and Carbon Corporation



# Another brand of Agrico makes good in a big way!

In accordance with our policy of building fertilizers to meet the special requirements of the various important crop and soil conditions of Florida, we developed a new brand of Agrico, particularly adapted to the special needs of the lower East Coast truck grower. This new brand, "Agrico for the East Coast Trucker," formulated only after careful field tests, has made good in a big way and now takes its place with the other Agrico brands as an outstanding fertilizer.



A. A. Seyler

Mr. A. A. Seyler of Ft. Lauderdale is one of the many growers who used this new brand of Agrico last season. Perhaps no other grower gave Agrico a more careful test. Certainly no other grower is more satisfied with the results obtained. He writes: "During the past 16 years I have farmed many types of soil growing mostly beans, peppers and tomatoes. This past season I used 150 tons of your new Agrico East Coast Trucker with outstanding results. I made many comparisons with Agrico in growing my 200 acres of beans and in every case Agrico produced a larger yield, and better quality. On 70 acres I averaged 125 hampers of beans on the first picking. On several I got as high as 175 hampers in first picking. On two acres of Black Valentines I picked 495 hampers in 3 pickings, all fancy beans. I had wonderful results with Agrico and am planning to use over 200 tons of it next season."



W. D. McDougald

Another well-known grower, Mr. W. D. McDougald, who has farmed in the Deerfield section for 11 years, writes: "I decided to try your new East Coast Trucker brand and it is a pleasure to state that I produced the following yields: On the 3 acres of beans where I used the Agrico, I produced 692 hampers. Two acres were Bountifuls and made 381 hampers. The other acre, Black Valentine beans, picked 221 hampers. My pepper crop also grown with Agrico is the best crop I have ever produced. It is a pleasure to endorse Agrico. I am delighted with it and intend to use more next season."

Many other growers know from the results they obtained this season that Agrico East Coast Trucker is an exceptional crop-producer. Space does not permit us to report their experiences but here's what a fertilizer dealer has to



G. A. Stevenson

say—and after all who knows better than the dealer? He gets the kicks as well as the bouquets. He writes: "Most growers here were so influenced by the cry of depression that they were ready to buy only low grade goods, but by persistent explanation I convinced a large number to use my best grade, Agrico. The growers who used it got marvelous yields and bear of all a low cost of production per bushel, which meant a great deal this year especially. From long experience I know that the only fertilizer to sell is the best fertilizer I can get and that's why I handle Agrico. Once I get a grower to try Agrico he always comes back for more." G. A. Stevenson, Deerfield.

Remember the results these growers got when you place your next fertilizer order and remember to use some Agrico on at least a part of your crops. See for yourself the difference it can make. Agrico contains extra plant foods that provide extra crop-producing power. There's a brand especially made for each crop. Any "A. A. C." dealer can supply you.

★ ★ ★

*Now more than ever before it is vitally necessary for the farmer to use adequate applications of fertilizer in order to get maximum yields per acre and low costs per bushel. The best grades of fertilizer are generally the cheapest to use, for the higher the yield per acre, the lower is the fertilizer cost per unit of crop. Fertilizers of high crop-producing power cost only a few cents more per acre and the slight difference in cost is usually returned many times over.*

HORACE BOWKER, President



THE AMERICAN AGRICULTURAL CHEMICAL CO.  
Makers of BRADLEY'S, BOWKER'S and AGRICO Fertilizers  
PIERCE, FLA.

**AGRICO—the fertilizer with the EXTRA plant foods**

**THE PEDDLER TRUCK SITUATION IN REGARDS TO FLORIDA FRUIT AND PRODUCE**  
(Continued from page 22)

make an immediate sale, set the boxes on platform, get his money and go on about his business, rather than spending sometimes as much as two hours looking here and there for containers in which to put the fruit when he has a bulk load.

**THIRD**—When a trucker sells fruit the buyer wants full measure, and then some, and will see that it is heaped up in pyramid form in the second hand containers, and, consequently, the trucker may find himself short 10 or 15 boxes when he sells out.

It is up to the managers of the packing houses to take the initiative in this step forward, and although it may seem like a very small step it is at least a start towards getting away from bulk fruit. The trucker may object at first to receiving the fruit in any way but bulk, which is natural with any one who has been used to something for a long time, but if the manager will point out the advantages, show him boxes filled with fruit, and make a demonstration by pouring the contents of a filled crate into an empty standard box, so that it overflows, and shows that full measure is being given, the trucker will at least try one load, and once he does you may be sure he is a booster for packaged fruit thereafter.

**CLASSIFIED**

**Advertisements**

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

**FANCY ABAKKA** pineapple plants. R. A. Saeger, Ankona, Florida.

**PUREBRED PULETS FOR SALE**—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorn hens now laying 70%. Write or wire for prices. C. A. Norman, Dr. 1440, Knoxville, Tenn.

**LAREDO SOY BEANS**, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

**THE CITRUS INDUSTRY**

**WANTED**—To hear from owner having good farm for sale. Cash price, particulars. John Black, Chippewa Falls, Wisconsin.

**BUDDED** trees new Florida commercial lemon, proven, thin skinned, juicy, seed immune. Also rough lemon, sour orange and Cleopatra seed and liningout seedlings. DeSoto Nurseries, DeSoto City, Fla.

**SEND** no money. C. O. D. Cabbage, Onion and Collard plants. All varieties 500—600; 1,000—95c; 5,000 and over 75c per 1,000. Standard Plant Co., Tifton, Ga.

C. O. D. Frostproof cabbage, onion and collard plants. All varieties 500—60c; 1,000—95c. Farmers Plant Co., Tifton, Ga.

**DUSTEB** — Niagara, Air-Cooled engine Steel truck-mounted. Nearly new. Half price. Samuel Kidder, Monticello, Fla.

**SEEDS**—ROUGH LEMON, SOUR ORANGE, CLEOPATRA. Pure, fresh, good germination. Also seedlings lineout size. De Soto Nurseries, DeSoto City, Fla.

**HIGH BLOOD PRESSURE** easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Fla.

**RAISE PIGEONS**—Profit and pleasure. Illustrated descriptive catalogue postage six cents. Vrana Farms, Box 314a, Clayton, Missouri.

**CROTALARIA SPECTABILIS**—Seed for sale. New crop, well cured, bright and clean. Price 25c per pound in 100 pound lots and over, 30c per pound in less quantities. f. o. b. Hastings, Bunnell, Lowell and San Antonio, Florida. F. M. LEONARD & COMPANY, Hastings, Florida.

**SCENIC HIGHWAY NURSERIES** has a large stock of early and late grapefruit and oranges. One, two and three year buds. This nursery has been operated since 1883 by G. H. Gibbons, Waverly, Fla.

**DETAILED SOIL** Analysis, Interpretations. \$2.50. Soil Laboratory, Frostproof, Florida.

**CABBAGE**, Onion and Collard plants. All varieties now ready. Postpaid 500 for \$1.00; 1,000 \$1.50. Expressed \$1.00 per 1,000; 5,000 and over 75c per 1,000. Satisfaction guaranteed. P. D. Fulwood, Tifton, Ga.

**NEW COMMERCIAL** lemon for Florida, the Perrine; proven. All residents need yard trees, keeping Florida money at home. Booking orders for budded stock for winter delivery. DeSoto Nurseries, DeSoto City, Fla.

**WANTED**—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

**SATSUMA BUDWOOD** from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

**SEED**—Rough lemon, sour orange, cleopatra. New crop from type true parent trees. Also thrifty seedlings. DeSoto Nurseries, De Soto City, Florida.

**Shipping Departments**

For Sale—One used "Marsh" Stencil Cutting Machine; cuts half-inch letters. Also have ink pot, brush and liberal supply of blank stencils. Machine guaranteed in best of condition and to operate in every way comparable with new machine.

Price, complete with accessories as listed, f.o.b. Tampa, \$50.

**THE DURO CO.**  
1219 Florida Ave., Tampa, Fla.

**"JACKSONVILLE'S LEADING HOTEL"**



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Caters especially to the fathers and mothers, sons and daughters of the South. YOUR hotel—and THE hotel for your family. — Absolutely Fireproof and Modern.

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Large Rooms  
Single With Bath  
\$2 to \$5  
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